

**Environmental Assessment**

**for**

**Little AI Commercial Thinning  
OR O90-EA-01-22**

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**UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
EUGENE DISTRICT**

**ENVIRONMENTAL ASSESSMENT NO. OR O90-EA-01-22  
Little AI Commercial Thinning**

## **1.0 INTRODUCTION**

The Bureau of Land Management (BLM) proposes to commercially thin approximately 117 acres of timber requiring approximately 8 acres of road right-of-way in T. 15 S., R. 06 W., Sections 7, 8, 17, and 18, Willamette Meridian. The proposed treatment area is located within the South Fork of the Alsea Watershed and Long Tom Watershed of the Coast Range Resource Area, Eugene District, in Lane County, approximately 4.5 air miles northeast of Horton, Oregon. Watershed analysis was completed for the South Fork of the Alsea Watershed in October 1995 by the Salem District BLM. Watershed analysis was completed for the Long Tom Watershed in October of 2000 by the Eugene District BLM. Timber harvesting would occur on land in the General Forest Management Area (GFMA) portion of the Matrix land use allocation (LUA) as identified in the *Eugene District Record of Decision and Resource Management Plan (Eugene District ROD/RMP), June 1995*.

### **1.1 Management Objectives and Goals for Land within the GFMA Portion of the Matrix Land Use Allocation**

Matrix land is Federal land outside of reserves and special management areas that will be available for timber harvest at varying levels. The management objectives under Matrix LUA, as directed under the Eugene District ROD/RMP are:

<Produce a sustainable supply of timber and other forest commodities to provide jobs and contribute to community stability.

<Provide connectivity (along with other allocations such as Riparian Reserves) between Late-Successional Reserves.

<Provide habitat for a variety of organisms associated with both late-successional and younger forests.

<Provide important ecological functions, such as dispersal of organisms, carryover of some species from one stand to the next, and maintenance of ecologically valuable structural components, such as down logs,

snags, and large trees.

<Provide early-successional habitat.

## **1.2 Conformance**

This Environmental Assessment (EA) is tiered to and in conformance with the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and the Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (ROD), April 1994, and the *Eugene District Record of Decision and Resource Management Plan, June 1995* (Eugene District ROD/RMP) as amended by the *Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, USDA Forest Service and USDI Bureau of Land Management January 2001*. Actions decided in this EA are in conformance with the (Aquatic Conservation Strategy Objectives, page B-11) and the Standards and Guidelines for Riparian Reserves (pages C-31 to C-37) of the ROD as described in part 6.0 of this EA.

## **2.0 PURPOSE OF AND NEED FOR ACTION**

*This section shall briefly specify the underlying purpose and need to which the BLM is responding in proposing the alternatives including the proposed action.*

The purpose of the proposed action is to provide forest products while maintaining or enhancing the productivity, sustainability, and diversity of the forest ecosystem. Approximately 1.94 million board feet (MMBF) of approximately 40 year old timber would be offered for sale via a timber sale contract.

The need for the action is established in the Eugene District ROD/RMP which directs that timber shall be harvested from Matrix lands to provide a sustainable supply of timber. This will also contribute to the Probable Sale Quantity (PSQ) for the Coast Range Resource Area. Another need for this action is to accelerate the attainment of ACS objectives. "Under the Aquatic Conservation Strategy, Riparian Reserves are used to maintain and restore riparian structures and functions of streams, confer benefits to riparian-dependent and associated species other than fish, enhance habitat conservation for organisms that are dependent on the transition zone between upslope and riparian areas, improve travel and dispersal corridors for many terrestrial animals and plants, and provide for greater connectivity of the watershed." (ROD, page B-13). Watershed analysis was completed for both the Long Tom watershed and the Alsea watershed and supported the need for silvicultural treatments within Riparian Reserve to accelerate the attainment of ACS objectives.

## **3.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION**

*This section shall describe the potential actions, including all alternatives.*

### **3.1 Alternative 1 - Proposed Action (Commercial Thinning in Upland and Riparian Reserves)**

The proposed action would be to commercially thin three units totaling approximately 117 acres of 40 year old timber requiring 8 acres of road right-of-way. (see EA Map). This alternative includes both upland thinning

(approximately 100 acres) and Riparian Reserve thinning (approximately 17 acres).

### **Upland**

The objectives of upland thinning are to recover suppression mortality, accelerate growth of residual trees, and enhance stand development by moving these densely stocked stands toward a more desirable condition. Thinning would be done so that residual trees would be spaced 18 to 24 feet apart, yielding a density of 80 to 105 trees per acre. This would retain a relative density of 30 to 40% and a stand basal area of 130 to 140 square feet per acre. Approximately 56 upland acres would be thinned in Unit 1, approximately 7 acres in Unit 2 and approximately 37 acres in Unit 3.

### **Riparian Reserves**

The objectives of Riparian Reserve thinning are to meet the long term objectives of the Aquatic Conservation Strategy (ACS) and to develop large trees within the reserve more quickly than would develop naturally. Leave tree selection would favor the retention of large dominant and codominant conifers. Thinning would be done so that residual trees would be spaced 22 to 28 feet apart, yielding a density of 70 to 95 trees per acre. This would retain a relative density of 20 to 30% and a stand basal area of 120 to 130 square feet per acre. Approximately 10 Riparian Reserve acres would be thinned in Unit 1, approximately 2 acres in Unit 2 and approximately 5 acres in Unit 3.

In order to provide and maintain for existing water quality and to meet ACS objectives, a non-treated buffer, approximately 50 feet on each side of the stream, would be required for streams 1 through 9; non-treated buffers ranging from 50 feet to 100 feet each side of the stream would be required for streams 11 through 13; and non-treated buffers measuring 210 feet each side of the stream would be required for streams 14 and 15.

Some skyline corridors may be needed through the stream 4 buffer in Unit 1 and through the buffers of streams 11, 12, 14 and 15 in Unit 3 to gain the necessary suspension of logs during yarding. There would be no yarding of logs through these skyline corridors. Skyline corridors would be kept approximately 150 feet apart to minimize impacts to reserve trees and would not exceed 12 feet in width. Skyline corridor trees would be felled and left parallel to the stream to the extent possible within the non-treated Riparian Reserve area and retained on site to provide downed wood. Any exposed soil would be covered.

### **Wildlife Survey & Manage Protection Buffers**

#### **Mollusks**

A total of 16 sites containing Survey and Manage mollusk species: Oregon Megomphix (*Megomphix hemphilli*), papillose tailedropper (*Prophysaon dubium*), and the blue-grey tailedropper (*Prophysaon coeruleum*), were identified in the vicinity of the proposed sale. Since those surveys, two species- the blue-grey and the papillose tailedroppers (both slugs) - have been removed from the Survey and Manage list and no longer require protection. However, all the blue-grey and the papillose tailedroppers sites are outside the unit treatment boundaries. A number of Oregon Megomphix (a terrestrial snail) sites fall out of the sale units and do not require management as do any Megomphix sites discovered after October of 1999. Six sites of the Oregon Megomphix were identified as needing buffers within the treatment areas.

#### **Red Tree Vole**

A total of 30 sites (21 active and 9 inactive) containing red tree vole nests were identified during pre-project surveys. The Management Recommendations for the Oregon Red Tree Vole (Version 2.0, 2000) would be followed.

### **Botanical Protection Buffers**

## Unit 1

***Otidea onotica*** is a Survey & Manage Category F species. Twenty-three locations of *Otidea onotica* were found in the project area, but only three of these sites are within the unit boundary. These three sites would be protected with a minimum of a 60-foot radius no-entry buffer. Disturbance to the remaining twenty sites outside the unit boundary is not expected; no management for these occurrences is planned.

***Sarcosoma mexicana*** was formerly a Survey & Manage Component 3 and Protection Buffer species under the 1994 Forest Plan and ROD. This species has been removed from the Standards & Guidelines of the Forest Plan (USDA & USDI 2001) for this region, due to lack of rarity. There are currently 809 records of this species in the Interagency Species Management System database (ISMS), with 61 of them from the Eugene District BLM. Thus, no special mitigation measures are recommended for this species.

***Ulota megalospora*** was formerly a Protection Buffer moss species under the 1994 Forest Plan and ROD. It has been removed from the Standards & Guidelines of the Forest Plan altogether (USDA & USDI 2001), and management for the species is no longer required. One site of *Ulota megalospora* is known from the project area, but is outside of the unit boundary. No mitigation measures are required or recommended.

## Unit 2

***Allotropa virgata*** was formerly a Survey & Manage Component 1 & 2 species in the 1994 Forest Plan and ROD. Although this species was recently removed from the Survey & Manage Standards and Guidelines (USDA & USDI 2001), it is still considered locally rare in the Coast Range of the Eugene District. The occurrences of this species in both Unit 2 and Unit 3 are just outside the unit boundaries. The species would be protected by a site-tree (210 foot) radius no-entry buffer, ensuring that the unit boundaries for both units are at least 210 feet from the center of the occurrences.

***Gymnopilus punctifolius***, a S&M Category B species, is a saprophytic fungus dependent on well-decayed, large conifers. This species is outside the boundary of Unit 2, but would be protected by a site-tree (210 foot) radius no-entry buffer, ensuring that the unit boundary is at least 210 feet from the center of the site.

***Loxosporopsis corallifera*** was formerly a S&M Component 1 & 3 lichen that has been removed from the Survey & Manage Standards & Guidelines (USDA & USDI 2001). It is an epiphytic lichen that is now considered frequent and abundant throughout the Oregon Coast Range. This species was found in three locations within the project area; two occurrences are outside of the unit boundary. The third location within the unit consists of a cluster of five *Tsuga heterophylla* trees. Although management for this species is no longer required, to maintain it within the treatment area, three of the five *L. corallifera* trees would be retained (not cut or damaged).

***Otidea onotica*** is a Survey & Manage Category F species. Eleven locations of *Otidea onotica* were found in the project area, but only one of these sites is within the unit boundary. This site would be protected with a minimum of a 60-foot radius no-entry buffer. Disturbance to the remaining ten sites outside the unit boundary is not expected; no management for these occurrences is planned.

***Platismatia lacunosa***, a S&M Category C species, is an uncommon epiphytic lichen usually associated with hardwood trees. This species was found in the project area but is outside of the unit boundary. It would be protected by a 60-foot radius buffer, to ensure that the unit boundary is at

least 60 feet from the species occurrence.

***Ramaria celerivirescens*** is a S&M Category B mycorrhizal fungal species that is endemic to the Pacific Northwest. Management recommendations for the species identify threats as “damage to host trees and disturbance of soil occupied by host tree roots. These include logging that removes mycorrhizal hosts and other actions that cause disturbance of the soil, particularly road, trail, and campground construction.” This species is outside the current boundary of Unit 2, but would be protected by a site-tree (210 foot) radius no-entry buffer, ensuring that the unit boundary is at least 210 feet from the center of the site.

### Unit 3

***Allotropa virgata*** was formerly a Survey & Manage Component 1 & 2 species in the 1994 Forest Plan and ROD. Although this species was recently removed from the Survey & Manage Standards and Guidelines (USDA & USDI 2001), it is still considered locally rare in the Coast Range of the Eugene District. The occurrences of this species in both Unit 2 and Unit 3 are just outside the unit boundaries. The species would be protected by a site-tree (210 foot) radius no-entry buffer, ensuring that the unit boundaries for both units are at least 210 feet from the center of the occurrences.

***Otidea onotica*** is a Survey & Manage Category F species. Eight locations of *Otidea onotica* were found in the project area, but only two of these sites are within the unit boundary. These sites would be protected with a minimum of a 60-foot radius no-entry buffer. Disturbance to the remaining six sites outside the unit boundary is not expected; no management for these occurrences is planned.

***Ulotia megalospora*** was formerly a Protection Buffer moss species under the 1994 Forest Plan and ROD. It has been removed from the Standards & Guidelines of the Forest Plan altogether (USDA & USDI 2001), and management for the species is no longer required. *Ulotia megalospora* was found to be epiphytic on five trees within the project area. Four of the trees would be reserved to remain a legacy of the species within the project area, while the fifth tree, located in a proposed road, would be cut to provide access to the project area.

## Roads

Main access to all units is through both BLM controlled Road No. 15-6-26, 15-7-36, and 14-6-34 and a privately controlled road. Approximately 1.1 miles of temporary dirt spur construction and 2.6 miles of road renovation would be required.

### Unit 1

This unit would use existing Roads Nos. 15-6-8 and 15-6-8.1. The 15-6-8 road would require 1,795 feet of renovation (clearing, grubbing, and excavation) starting from Road No. 14-6-34. The 15-6-8.1 road would require 780 feet of renovation starting from Road No. 14-6-34.

Five temporary dirt spur roads would be constructed to allow further access to this unit. Spur A would require 1,720 feet of new construction off Road No. 15-6-8. Spur B would require 890 feet of renovation of an existing private road from the east and 1,180 feet of new construction (150 feet on private and 1,030 feet on BLM). Spur C would require 395 feet of new construction off Road No. 15-6-8. Spur Q would require 150 feet of new road construction off Road No. 15-6-8.1. Spur R would require 330 feet of new road construction off Road No. 15-6-8.1.

The 15-6-8 and 15-6-8.1 roads and Spur B would require truck assist.

### Unit 2

This unit would require the renovation and use approximately 898 feet of the existing Road No. 15-6-7. Renovation would consist of clearing, grubbing and excavation. A landing within Riparian Reserve would be needed with this alternative to yard approximately 1 acre of thinning in the Riparian Reserve adjacent to the existing 14-6-34 road.

### Unit 3

This unit would use existing Roads Nos. 15-6-17.1 and 15-6-17.2. The 15-6-17.1 road would require 4,880 feet of renovation starting from Road No. 15-6-17.2. The 15-6-17.2 would require 4,224 feet of renovation (clearing, blading, and cutting of trees) starting from Road No. 14-6-34. The 15-6-17.2 road would require truck assist.

Two temporary dirt spur roads would be constructed to allow further access to this unit. Spur F would require 1,180 feet of new construction off Road No. 15-6-17.1. Spur G would require 660 feet of new construction off Road No. 15-6-17.1.

Summer logging and hauling (dry season with approximately 3 operating dry seasons) would be required. All temporary constructed dirt spurs would be built during the dry season and would be designed to 14 feet subgrades with no ditch. Drain dips and rolling dips would be used where possible to provide for drainage. No new stream crossings would occur with this new spur construction. Each new dirt spur constructed within the project area would be decommissioned to restore the hydrologic conditions of the road bed area and would not over-winter. Methods of decommissioning would be dependent on site specific conditions existing at the completion of logging and would be dependent on a variety of resource objectives and concerns.

Access to the existing roads to be renovated would be blocked and waterbarred between yarding seasons (over- winter) as designated by the Administrative Officer to prevent road damage and soil disturbance due to road use and to divert water runoff and possible sediment movement away from existing streams. Truck assisted areas of Spur B, Road No. 15-6-08.0, Road No. 15-6-08.1, and Road No. 15-6-17.2 would be waterbarred and barricaded to alleviate erosion concerns upon project completion.

The following approximate 2.75 miles of existing road within or near the project area would be further evaluated for decommissioning (storage) within a interdisciplinary Transportation Management Planning (TMP) process. Those roads that are decommissioned would be reopened for resource management purposes as required. Methods of decommissioning would be dependent on site specific conditions and would be tailored to meet a variety of resource objectives and concerns.

- <Road No. 15-6-17.0 (approximately 0.4 mile in length),
- <Road No. 15-6-17.1 (approximately 0.3 mile in length, east of Unit 3 boundary),
- <Road No. 15-6-17.3 (approximately 1.0 mile in length, to the junction with road 15-6-8.1),
- <Road No. 15-6-17.4 (approximately 0.1 mile in length, to the section line)
- <Road No. 15-6-18.1 (approximately 0.75 mile in length),
- <Road No. 15-6-18.3 (approximately 0.2 mile in length).

### **Yarding**

During yarding, log lengths would be limited to a maximum of 40 feet to protect residual trees. Yarding would be done from newly constructed temporary spurs, and renovated existing road grades with cable or tractor equipment. All yarding would be to designated or approved landings.

#### Cable Yarding

One end suspension of logs would be required during yarding and intermediate support would be required where necessary to attain the required suspension. Wherever possible yarding corridors would be limited to 12-feet in width. Cable yarding with one end suspension would be required within the Riparian Reserves. Directional felling and yarding away from streams would be required to provide for streambank stability and water quality.

#### Tractor Yarding

All tractor skid trails would be predesignated and approved by an authorized officer, would be limited to slopes less than 35 percent, and would occupy less than 10% of the tractor logged area. Tractor yarding would occur during periods of low soil moisture (generally less than 25%). Tractor yarding would be to designated or approved landings. Skid trails used in the harvesting would be water barred and subsoiled with a self-drafting winged subsoiler to minimize soil compaction and maintain long term soil productivity upon completion of the sale. No tractor yarding of any kind would occur within Riparian Reserves on these units.

#### **Other Design Features**

The following project design features would be implemented in conjunction with the proposed action. Project design features are operating procedures normally used to avoid or reduce adverse environmental impacts as developed by the interdisciplinary team, or are required standards and guidelines included in a timber sale contract.

1. In order to slow the spread of noxious weeds, all yarding and road construction equipment including excavator would be cleaned prior to arrival on BLM Land.
2. For the purpose of long term productivity and maintenance of biological diversity, retain to the extent possible all down material of advanced decay (Decay Class 3, 4 or 5) for coarse woody debris (CWD).
3. To provide habitat for cavity dependent wildlife and to protect the future source of down logs, snags not posing a safety hazard would be reserved. Directional felling and yarding would be utilized to protect residual green trees and snags consistent with State safety practices. Snags felled as danger trees would be retained as CWD.
4. Harvest activities would not occur during sap flow season (April 15- June 15) to limit bark / cambium damage to residual trees.
5. All plus trees (genetically select trees) would be reserved. Tree numbers are 1616, 1622, 1623, 1626, 1627, 1628, 1629, 1630, and 1631.
6. All Pacific yew, western redcedar, and hardwoods would be retained to the extent possible to maintain diversity.
7. Unmerchantable tree tops and limbs would not be yarded to the landing and would be left on site to contribute to soil productivity. Slash piles would be covered and burned on the main line roads.
8. Douglas-fir would be selected as a leave tree over western hemlock, due to the presence of some hemlock dwarf mistletoe (*Arceuthobium tsugense*) in these stands.

### **3.2 Alternative 2 (Commercial Thinning in Upland Only)**



Under this alternative, three units totaling approximately 100 acres would be commercially thinned (see EA Map ). This alternative includes only upland thinning with no Riparian Reserve thinning.

### **Upland**

The objectives of upland thinning are to recover suppression mortality, accelerate growth of residual trees, and enhance stand development by moving these densely stocked areas toward a more desirable condition. Thinning would be done so that residual trees would be spaced 18 to 24 feet apart, yielding a density of 80 to 105 trees per acre. This would retain a relative density of 30 to 40% and a stand basal area of 130 to 140 square feet per acre. Approximately 56 upland acres would be thinned in Unit 1, approximately 7 acres in Unit 2, and approximately 37 acres in Unit 3.

### **Wildlife Survey and Manage Protection Buffers**

#### **Mollusks**

A total of 16 sites containing Survey and Manage mollusk species: Oregon Megomphix (*Megomphix hemphilli*), papillose tailedropper (*Prophysaon dubium*), and the blue-grey tailedropper (*Prophysaon coeruleum*), were identified in the vicinity of the proposed sale. Since those surveys, two species- the blue-grey and the papillose tailedroppers (both slugs) - have been removed from the Survey and Manage list and no longer require protection. However, all the blue-grey and the papillose tailedroppers sites are outside the unit treatment boundaries. A number of Oregon Megomphix (a terrestrial snail) sites fall out of the sale units and do not require management as do any Megomphix sites discovered after October of 1999. Like Alternative 1, six sites of the Oregon Megomphix were identified as needing buffers within the treatment areas.

#### **Red Tree Vole**

A total of 30 sites (21 active and 9 inactive) containing red tree vole nests were identified during pre-project surveys. The Management Recommendations for the Oregon Red Tree Vole (Version 2.0, 2000) would be followed.

### **Botanical Survey and Manage Protection Buffers**

#### **Unit 1**

*Otidea onotica* is a Survey & Manage Category F species. Twenty-three locations of *Otidea onotica* were found in the project area, but only one of these sites is within the unit boundary. This site would be protected with a minimum of a 60-foot radius no-entry buffer. Disturbance to the remaining twenty two sites outside the unit boundary is not expected; no management for these occurrences is planned.

The occurrences for *Sarcosoma mexicana*, and *Ulotia megalospora*. would be the same as described in Alternative 1. No special mitigation measures are required or recommended for these species.

#### **Unit 2**

The occurrences and protections for the following species would be the same as described in Alternative 1: *Allotropia virgata*, *Gymnopilus punctifolius*, *Loxosporopsis corallifera*, *Otidea onotica*, *Platismatia lacunosa*, and *Ramaria celerivirescens*.

#### **Unit 3**

The occurrences and protections for the following species would be the same as described in

Alternative 1: *Allotropa virgata*, *Otidea onotica*, and *Ulota megalospora*.

### **Roads**

Road access under this alternative does not differ from that of Alternative 1-Proposed Action. No landings within Riparian Reserve would be required with this alternative.

### **Yarding**

During yarding, log lengths would be limited to a maximum of 40 feet in the thinning areas to protect residual trees. Yarding would be done from newly constructed temporary spurs, and renovated existing road grades with cable or tractor equipment. All yarding would be to designated or approved landings.

#### **Cable Yarding**

One end suspension of logs would be required during yarding and intermediate support would be required where necessary to attain the required suspension. Wherever possible yarding corridors would be limited to 12-feet in width.

#### **Tractor Yarding**

All tractor skid trails would be predesignated and approved by an authorized officer, would be limited to slopes less than 35 percent, and would occupy less than 10% of the tractor logged area. Tractor yarding would occur during periods of low soil moisture (generally less than 25%). Tractor yarding would be to designated or approved landings. Skid trails used in the harvesting would be water barred and subsoiled with a self-drafting winged subsoiler to minimize soil compaction and maintain long term soil productivity.

### **Other Design Features**

Design features under this alternative do not differ from that of Alternative 1-Proposed Action.

## **3.3 Alternative 3 - No Action**

Under this alternative, no timber would be harvested from these stands, no new spurs would be constructed and no existing roads would be renovated. This stand would be allowed to grow along its current growth trajectory. In order to meet the Probable Sale Quantity (PSQ), another area would have to be selected for timber harvesting activities, which may have greater environmental effects.

## **4.0 AFFECTED ENVIRONMENT**

*This section shall describe the relevant resource components of the existing environment.*

### **4.1 Vegetation**

#### **Landscape Description**

##### **South Fork of the Alsea Watershed**

The South Fork of the Alsea Watershed is located in the central Oregon Coast Range approximately 20 miles southwest of Corvallis. Approximately 95% of the watershed is in Benton County and the remainder is in Lane County. It is the major tributary of the Alsea river encompassing over 40,300 acres. Federal and private land ownerships are well intermingled with a 10,000 acre block of

consolidated BLM ownership on the north and east slopes of Prairie Mountain. The BLM manages 23,000 (57%) within the watershed. Of the BLM administered land within the South Fork of the Alsea Watershed, 69% are managed as **Late Successional-Reserve (LSR)** and 31% are managed as **GFMA**. Approximately 15,371 acres or 37 % of BLM managed forest lands are in late-successional condition (i.e.,  $\geq 80$  years old), meeting the 15% mature habitat retention requirement for the watershed.

#### Long Tom Watershed

The Long Tom Watershed is located in Lane County, west of the city of Eugene. The watershed contains approximately 262,749 acres. The watershed landscape pattern is that of checkerboard ownership with approximately 21,809 acres (8%) managed by the BLM. Of the BLM administered land within the Long Tom Watershed, 8% is managed as **Wetlands**, 47% is managed as **GFMA**, 9% is managed as **Connectivity**, and 36% is managed as **LSR**. Approximately 3,180 acres or 16.0% of BLM managed forest lands are in late-successional condition (i.e.,  $\geq 80$  years old), meeting the 15% mature habitat retention requirement for the watershed.

#### Stand Description

The stands within the treatment area are 38 to 41 year old even-aged stands dominated by Douglas-fir with canopy closure varying from 50 to 90% closure. Minor components include western hemlock, western redcedar, and hardwoods. A few pacific yew and grand fir were observed as well. The stands were established between 1957-1960 following logging.

##### Unit 1

The predominant plant association in the project area is western hemlock/sword fern with vine maple and some drier plant components such as salal, oceanspray, and dwarf Oregon grape dominating different areas of the unit. The southeast portion of the project area is drier with fair amounts of bigleaf maple and oceanspray. The western portion consists of broad rigelines with a heavy shrub component, particularly salal, in south-facing draws. The northwest portion of the project area is dry and rocky with more golden chinkapin and with a few, scattered, large, residual Douglas fir but with overall low plant diversity. Scattered short snags are present with a fair quantity of CWD in decay classes 4 and 5. Some yew trees are also present throughout the project area .

##### Unit 2

This Unit 2 project area is predominantly south-facing with one central main draw with much blow-down. There is much western hemlock in the stand with few hardwoods except for several alder and bigleaf maple scattered up the draw and golden chinkapin near ridges. Plant communities include western hemlock/vine maple/salal/feather moss, western hemlock/vine maple/Oregon grape-salal, and western hemlock/vine maple/sword fern. Residual 3- to 5-foot diameter stumps were present and spaced 15 to 30 feet apart. There is a good quantity of CWD present in decay classes 3, 4 and 5.

##### Unit 3

The Unit 3 project area contains patches of western hemlock, western redcedar and vine maple. The northern portion of the project area consists mostly of a western hemlock/dwarf Oregon grape-salal plant community grading into a western hemlock/dwarf Oregon grape/sword fern community down slope. The northeast ridgeline and face is a dog-hair thicket of Douglas fir and hemlock that has been precommercially thinned. The southern portion of the project area has heavy amounts of vine maple, salal, and dwarf Oregon grape. The broad ridgeline and upper draws have moderate vine maple, oceanspray, and salal. Residual stumps are present, measuring up to 6 feet in diameter, are located 40 to 60 feet apart, and are well decayed. It appears that some large trees were felled and left during previous stand management episodes, thus there is a fair amount of CWD of advanced decay scattered throughout the project area.

## 4.2 Botanical Resources

### Special Status, and Survey & Manage Species

Extensive surveys of the project areas were conducted for federally Threatened, Endangered, BLM Special Status, and Survey and Manage plant and fungal species in the project area. No federally Threatened or Endangered plant species were located during botanical surveys.

**Unit 1:** *Otidea onotica* was found in 23 separate locations within the project area. Only three of these sites are within the unit boundary. *Sarcosoma mexicana* was documented from within the unit boundary. One location of *Ulotia megalospora* was found within the project area, but is outside of the unit.

**Unit 2:** One site of *Allotropa virgata* was located in the project area, but is outside of the unit boundary. *Gymnopilus punctifolius* was located in the project area, but is outside of the unit boundary. *Otidea onotica* was found in 11 separate locations within the project area. Only one of these sites is within the unit boundary. *Loxosporopsis corallifera* was found in three separate locations in the project area. Two of the occurrences are outside of the unit. *Platismatia lacunosa* was found in the project area but is outside of the unit boundary. *Ramaria celerivirescens* was found in the project area but is outside of the unit boundary.

**Unit 3:** One site of *Allotropa virgata* was located within the project area, but is outside of the unit boundary. *Otidea onotica* was found in eight separate locations within the project area. Two of these sites are within the unit boundary. Five trees with *Ulotia megalospora* were identified within the unit boundary.

### Noxious Weeds and Non-Native Plant Species

Plants of meadow knapweed and Scot's broom were located along roadsides and pulled in 1996 and 1997. The interior stands contained only small amounts of St John's wort, tansy ragweed, bull thistle, and Canada thistle.

## 4.3 Soils

### Unit 1

The predominant soils in the project area are Blachly, Bohannon, and Preacher soils. The Blachly series consists of deep, red, clayey soils formed in fine-textured colluvium from sedimentary and volcanic rocks in areas receiving from 60 to 100 inches of precipitation. They occur on ridgetops and sideslopes at elevations of 1,800 to 3,200 feet.

The Bohannon series consists of moderately deep, well-drained gravelly or cobbly loam soils formed in colluvium from arkosic sandstone and basic igneous rocks in the areas receiving from 60 to 120 inches of precipitation. They occur on gently sloping to very steep mountainous upland at elevations of 500 to 3,000 feet.

The Preacher series consists of moderately deep, well-drained, brown, loam soils developed in colluvium derived from arkosic sandstone in areas receiving from 80 to 100 inches of precipitation. They occur on gently sloping to steep slopes at elevations of 500 to 2,500 feet.

### Unit 2

The predominant soils in this project area are Marty and Bohannon soils. The Marty series consists of deep, well-drained, red, gravelly loam to clay loam formed in colluvium from coarse grained intrusive igneous rock in

areas receiving 60 to 120 inches of precipitation. They are found on gently broad ridges and steep slopes at elevations of 500 to 3,000 feet.

### **Unit 3**

The predominant soils in this project area are Blachly and Bohannon soils.

## **4.4 Fisheries, Aquatic, and Riparian Resources**

The South Fork Alsea in the project area is a series of marshes, pools and riffles. As a result of a past landslide at District boundaries, alluvial material has accumulated to form the low-gradient area. Because of high water table there are few trees adjacent to the stream. Spawning habitat in the main stream is limited, but there is good spawning in tributaries, especially in the area next to the 14-6-34 road. Low gradients and vegetation help retain sediment that might reach the stream.

The project area is low hills with moderate to low slopes along the South Fork of the Alsea. The primary source erosion is surface, and roads, but there is low to moderate probability of lateral slope displacement or channel failure.

There are 15 streams and 2 non-flowing draws located within the general vicinity of the treatment area (see the EA map), including the South Fork (SF) of the Alsea River (stream 13). Streams 1, 2, 3, 4A, 4B, and 16 flow into Ferguson Creek and influence the water quality for fisheries located downstream within the Long Tom Watershed. Streams 5, 6, 7, 8, 9, 10, 11, 12, and 17 flow into the SF of the Alsea River and influence water quality and fisheries within that watershed. Streams 14 and 15 are actually non-permanent, non-surface flowing drainages with no defined channel within 210 feet of the unit boundary.

### **Unit 1**

There are eight small streams associated with unit 1. Side slopes along these streams are moderately steep (30% to 50%). Streams 1 through 4 and stream 16 adjacent to the Unit 1 treatment area flow into Ferguson Creek within the Long Tom Watershed. Stream 5 starts in a small wet area east of Road No. 14-6-34. Streams 5 through 7 flow into the SF of the Alsea River, which borders the western side of this unit.

Streams 1 through 7 are not fish bearing, although stream 4 becomes fish bearing with cutthroat trout just outside of the unit boundary. Ferguson Creek contains spawning and rearing habitat for cutthroat trout downstream from this treatment area. Vegetation along streams 1 through 7 includes Oregon grape, sword fern, devil's club, and salal with a predominate Douglas-fir overstory.

The entire length of stream 13, the SF of the Alsea River, west of the Unit 1 treatment area is fish bearing. This stream provides rearing habitat and some spawning areas for cutthroat trout and sculpin within the treatment area. Coho salmon were stocked in this area approximately 20 years ago, but they are no longer found there. Coho and steelhead spawn and rear downstream from the treatment area, but the Alsea Falls, located approximately 4 miles downstream, blocks their passage upstream. Fish habitat in this stream includes pools, glides, marshes, and riffles. Beaver dams form part of the pond and marsh areas. Stream substrates include silt, sand, small amounts of gravel, rubble, and cobble. There are moderate to high amounts of logs and debris in the channel. Second growth conifers are in and near the riparian areas and there is a small portion of large conifers. Hardwoods, brush, and aquatic plants are also located along the stream.

### **Unit 2**

There is one stream centrally located between the two treatment areas of this unit, stream 8. It is located west of road 15-6-18, passes under road 14-6-34, and flows into stream 12, a tributary to the SF Alsea River.

While stream 8 is not fish bearing, stream 12, the western tributary to the SF Alsea River, is. Stream 12 contains rearing habitat and spawning areas for cutthroat trout and sculpin. This stream contains riffles, rapids, and pools with substrates of gravel, sand, silt, rubble, cobble, and a few boulders. Amounts of logs and debris vary from low to high along this stream. Hardwoods, brush, and various sized second growth conifers are within the riparian area.

### **Unit 3**

There are six streams associated with this unit; streams 9 and 10 are located south of the treatment area and streams 12, 14, 15 to the north and stream 11 to the east of the treatment area. Buffered stream 9 starts just inside the unit and flows south. Stream 10 starts just outside the unit and flows parallel to the unit boundary and may be within 210 feet of the boundary in some areas. Stream 11 has a small fork flowing in from the south and has very steep sideslopes, with some blowdown within the 50-foot non-treated buffer area. Streams 14 and 15 have very steep headwalls and sideslopes and are fully buffered (at least 210 feet outside the unit boundary) for slope stability concerns.

Streams 9, 10, 11, 14, and 15 are not fish bearing. Streams 9 and 10 flow into a tributary of the SF Alsea River that is used by cutthroat trout located south of the treatment area. Stream 11, 14, and 15 flow into stream 12, which was described above.

## **4.5 Wildlife**

### **Unit 1**

#### **Threatened and Endangered Species**

Within the unit, there are no activity centers for any terrestrial wildlife species listed or proposed under the Endangered Species Act. The Alsea spotted owl center (MSNO#4410) is located to the southeast of the Unit. These owls produced two young in 2000. Surveys are ongoing at present, so survey data for 2001 is yet to be submitted. This unit does not contain suitable habitat for these species, but is comprised of dispersal habitat for the northern spotted owl.

No habitat for the marbled murrelet exists within the harvest unit, but approximately eight acres of suitable habitat does exist within 0.25 mile of the proposed action. This area was not subject to complete murrelet surveys and therefore must be assumed to be occupied.

No bald eagle habitat areas are located in the vicinity and no bald eagles have been documented in the area. This action would have "No Effect" on this species.

The above information is based on current knowledge of these species within the vicinity of the action area. If any new information regarding these or other protected animals arises, this action could be subject to mitigation measures intended to safeguard the species.

### **Special Status Species**

In 1995, a northern goshawk nest with chicks was discovered to the north of the unit. Subsequent annual surveys have not resulted in further detections of this species in or near the area. If these birds are determined to be nesting, within or near the proposed unit during future surveys, appropriate mitigation measures would be pursued. No other raptor nests or heron rookeries were located during several field visits to the units.

A western pond turtle was observed in the spring of 2001 in a beaver pond approximately 0.5 mile south of unit one in the upper reaches of the Alsea River. Although this location is outside of the units and upstream, it is reasonable to presume this turtle represents a population that ranges up the Alsea River at least as far as the observation. This stream flows between the units and would be buffered from the treatment area.

### **Survey and Manage Species**

#### **Mollusks**

Four sites of the Oregon Megomphix (*Megomphix hemphilli*), a terrestrial snail, were identified during pre-project surveys. Three of these sites are outside the Unit 1 treatment boundaries. The remaining megomphix site would be protected with a 1/4 acre no-entry buffer within the treatment area. Four blue-grey taidroppers (*Prophysaon coeruleum*), and six papillose taidroppers (*Prophysaon dubium*) were found during pre-project surveys. These sites were excluded from the treatment area, though these two species have been removed from the Survey and Manage list and no longer require protection.

#### **Red Tree Vole**

A total of 25 sites (20 active and 5 inactive) containing red tree vole nests were identified during pre-project surveys. All active sites have been excluded from the proposed Unit 1 and meet the current management recommendations for the Red Tree Vole (*Management Recommendations for the Oregon Red Tree Vole Version 2.0, 2000.*) The inactive nests were also excluded from the treatment area due to their location within the habitat buffers for the active nests.

## **Unit 2**

### **Threatened and Endangered Species**

No habitat or known activity centers for any federally listed or proposed species exists within the unit or within 0.25 mile. This unit is considered dispersal habitat for the northern spotted owl.

### **Survey and Manage Species**

#### **Mollusks**

One site of the Oregon Megomphix (*Megomphix hemphilli*) was identified during pre-project surveys. This site has been excluded from the proposed Unit 2 treatment area with a 0.66 acre buffer. Two papillose taidroppers (*Prophysaon dubium*) were found during pre-project surveys. These sites were excluded from the treatment area, though this species has been removed from the Survey and Manage list and no longer requires protection.

#### **Red Tree Vole**

Two sites containing active red tree vole nests were identified during pre-project surveys. These sites have been excluded from the proposed Unit 2 treatment area and meet the current management recommendations for the Red Tree Vole (*Management Recommendations for the Oregon Red Tree Vole Version 2.0, 2000.*)

### **Unit 3**

#### **Threatened and Endangered Species**

No habitat or known activity centers for any federally listed or proposed species exists within the unit or within 0.25 mile. This unit is considered dispersal habitat for the northern spotted owl.

#### **Survey and Manage Species**

##### **Mollusks**

One site of the Oregon Megomphix (*Megomphix hemphilli*) was identified during pre-project surveys. This site has been excluded from the proposed Unit 3 treatment area.

##### **Red Tree Vole**

Two sites containing inactive red tree vole nests were identified during pre-project surveys. Because of their inactive status and distance from active nests, these sites would not receive buffers, however, the trees themselves would be reserved.

#### **Big Game (All Units)**

Sign left by blacktail deer was observed throughout the unit. Deer and elk use this area from time to time for cover. Nearby clearcuts on private land would be used for foraging by both deer and elk. The project area presently serves as hiding cover and to a minor extent, thermal cover for deer and elk.

Adjacent to the project area are some scattered large standing and down trees that could provide denning sites for black bears. Additionally, neighboring older stands would provide this material. Black bears are known to exist within the area although no signs of this animal were detected during field visits.

## **4.6 Cultural Resources**

A cultural resource inventory of the proposed area has not been completed. Past pre-project inventories in the lands administered by the Bureau of Land Management within the Coast Range Physiographic Province have not resulted in the discovery of historic properties, therefore no cultural resources are expected to be affected. The guidelines of the Protocol Agreement between the Bureau of Land Management and the Oregon State Historic Preservation Officer makes the conclusion "that the chances of finding important historic properties in the area are so minimal such that further cultural resource survey prior to project implementation does not justify the continued expenditure of federal funds in the effort". The Protocol Agreement does set forth procedures covering post-project cultural resource surveys which would be implemented.

## **4.7 Recreation and Visual Resources**

Units 1 and 2 are within the Upper Lake Creek Special Recreation Management Area (SRMA) boundary. The SRMA is used primarily for dispersed recreational activities such as hunting, driving for pleasure and camping. A Recreational Area Management Plan or RAMP is scheduled to be developed in 2000-2001. The Salem District at one time wanted to coordinate with the Eugene District to convert some of the roads such as 15-6-18 to develop an equestrian trail system linking the two districts. This issue will be addressed in the RAMP. Also the Eugene District ROD states that the Alsea Byway would be designated at a future date; one possible route would be along road 14-6-34.

The project area is classified as Visual Resource Management Class III, which allows for moderate levels of



change to the characteristic landscape. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale found in the predominant features of the characteristic landscape. VRM III standards are to “partially retain the existing character of landscapes” (ROD/RMP, p.75). Commercial thinning activities meet the objectives for Class III visual resources.

#### **4.8 Fuels/Downed Woody Debris**

The pre-harvest fuel loading in the project area is low, approximately 6.4 tons per acre. Some areas of moderate ladder fuels exist, but do not spread throughout the treatment area. Some decay class 4 and 5 CWD exists on the units. The brush in the unit survey areas was heavy, with some large openings. Salal dominates the brush species, with large amounts of red huckleberry, Oregon grape, vine maple, and sword fern also present.

### **5.0 ENVIRONMENTAL CONSEQUENCES**

*This section shall explain and summarize the environmental consequences including direct, indirect, short-term, long-term, and cumulative effects of all the alternatives.*

This environmental assessment incorporates the analysis of Environmental Consequences, including cumulative effects, in the *USDA Forest Service and USDI Bureau of Land Management Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl*, February 1994, (Chapter 3 & 4) and in the *Eugene District Final Proposed Resource Management Plan/Environmental Impact Statement*, November 1994 (Chapter 4). These documents analyze most effects of timber harvest and other related management activities. None of the alternatives in this assessment would have cumulative effects on resources beyond those effects analyzed in the above documents. The following section supplements those analyses, providing site-specific information and analysis particular to the alternatives considered here.

#### **5.1 Unaffected Resources**

The following resources are either not present or would not be adversely affected by the proposed action or any of the alternatives: Areas of Critical Environmental Concern, prime or unique farm lands, floodplains, Native American religious concerns, solid or hazardous wastes, Wild and Scenic Rivers, Wilderness, and low income or minority populations,.

##### **Cultural Resources**

Cultural Resources are not expected to be affected by the proposed action or any of the alternatives.

##### **Air Quality**

Burning activities, if required for site preparation, would be consistent with Oregon Smoke Management Regulations. The proposed burning would be of very short duration and would have no local short or long-term impacts on air quality. All burning would meet the State Implementation Plan for smoke management and the National Ambient Air Quality Standards set forth in the Clean Air Act. This resource will not be addressed further in the analysis. The proposed project area is approximately 6 miles west of the Willamette Designated Area (DA).

## **5.2 Alternative 1 - Proposed Action**

### **Vegetation**

#### **Landscape Description**

Within the Coast Range Resource Area of the Long Tom Watershed, the Eugene District BLM has developed several timber sales since the implementation of the Northwest Forest Plan. BLM sold the Petzold Road timber sale (40 acres of regeneration harvest) and the Prego 4 sale (25 acres of commercial thinning and 18 acres of regeneration harvest) in FY1995. Woody Hayes timber sale (25 acres of commercial thinning and 21 acres of regeneration harvest) was sold in FY1996. All of these sales were located within the GFMA LUA of the watershed.

In the South Valley Resource Area of the Long Tom Watershed the Eugene District BLM sold the Battle East timber sale, 58 acre regeneration harvest, and 32 acres of regeneration harvest for replacement volume for the Roman Dunn timber sale.

Within the South Fork of the Alsea Watershed, the Salem District BLM developed the Super Hammer sale (183 acres of commercial thinning) in FY 1995. This sale was also located in GFMA LUA.

In addition to the proposed action, commercial thinning projects are in the process of being planned for the future for these watersheds. Acres within project areas would be subject to change as planning progresses. Site specific analyses for each sale would occur prior to being sold.

Cumulatively within these watersheds, there would be an increase in mature and old forest habitat over time on BLM managed lands as the late-successional reserves and Riparian Reserves mature and develop, even with these scheduled future thinning projects. Private forest lands would most likely continue to be subject to intensive, short-rotation forest management.

#### **Stand Description**

The proposed action would result in lower density stands, 80 to 95 trees per acre in the upland and 70 to 95 trees per acre in the Riparian Reserves, of trees with good crown development. During the time of harvest, direct effects would include damage to residual trees and roots, disturbance to understory vegetation, and opening of the canopy, which may result in some wind throw. After harvest, the amount of light reaching the forest floor would increase due to the opening of the canopy, causing an increase in understory vegetation. There would be recovery of mortality and potential mortality. There would be more growing space, decreasing tree-to-tree competition and increasing tree vigor. This increase in vigor would increase diameter growth, increase height growth, and allow for the expansion of both the crown and root system. As these stands grow through time, the crowns would begin to close, decreasing the light to the forest floor and thereby decreasing understory vegetation. Overall vegetative diversity would be maintained by reserving hardwood trees and other coniferous species.

### **Botanical Resources**

No federally Threatened, Endangered or BLM Special Status plant species would be impacted by the proposed action. Little is known about the effects of timber harvesting on non-vascular plant components. For those species that form complex mycorrhizal or epiphytic relationships with overstory trees, such as the survey and manage species located in this unit, removal of host trees would be detrimental in the short-term. The non-treated buffers for these species and design features should allow for a continuing legacy of these species in the Little Al Thinning units and the surrounding area.

The proposed action would result in changes in microclimate for plants and fungi, increasing light and wind intensities and decreasing soil moisture and relative humidity. The diversity and cover of shrub and herbaceous species may increase in the first few years following thinning, although this effect would be expected to also dissipate as tree canopies expanded. As long as non-natives and/or noxious species aren't introduced during the proposed action, the native plant community would be expected to continue on a trajectory toward mature and then old-growth stand characteristics.

Tree yarding may result in soil disturbance and may increase the likelihood of non-native and potentially noxious species entering and/or increasing in the unit. Road building and land-based yarding may exacerbate the spread of noxious and non-native species. Design feature number 1 should help alleviate the potential for the increase or spread of noxious and non-native species.

A number of sensitive and common species of non-vascular plants and fungi are postulated to depend on varying stages of decaying logs. Although decay classes 3, 4, and 5 downed logs would be protected from harvest with the Proposed Action, there are no protections for decay classes 1 and 2 downed logs. This disparity could lead to a gap in the presence of certain decay class logs through time.

Cumulative impacts on known sites of Survey and Manage botanical species would be minimal. It is unlikely that management activities as described in alternatives 1 and 2 would compromise the viability of the species known to occur in the project area.

### **Soils**

Under the proposed action, management practices would not cause soil compaction capable of impairing overall stand growth, long-term productivity, or the hydrologic behavior of the treatment area. Sufficient litter, logging debris, and downed logs would be retained to maintain soil organic material, soil organisms, and nutrient levels. There are no slope stability concerns within the treatment area. There are two areas, the headwalls and associated sideslopes of streams 14 and 15, with stability concerns. While these areas have been designated out of the treatment area, some skyline corridors may need to be installed within the Riparian Reserve to get required suspension. This may involve felling and leaving trees (no yarding), increasing the risk of landslides and debris torrents. Designating skid trails, restricting tractor yarding to dry seasons and gentler slopes, and subsoiling skid trails would keep overall growth loss effects to 2 % or less of any treated area compacted as outlined in the ROD/RMP (page 37).

### **Fisheries, Aquatic, and Riparian Resources**

#### **Fisheries**

There currently are no proposed or listed fish species in the project area. Buffers and wide Riparian Reserves proposed for streams 12 and 13 would maintain shade and protect these streams and riparian areas from channel damage, erosion, and siltation. Buffers and Riparian Reserves proposed upstream from fish habitat (streams 1 through 11, 14, and 15) would provide further protection of water quality for downstream fisheries and also help maintain riparian and stream conditions for invertebrates. Thinning within Riparian Reserves would result in larger diameter trees faster in the future. Some of these trees would eventually fall and enter the streams as CWD where they would improve channel structure.

Cumulative effects in the future from thinning in Riparian Reserves would include the above improvements in stream structure within the project area. Fish habitat conditions are expected to be protected from adverse cumulative effects at downstream areas by planned Riparian Reserves and stream buffers including for slope stability. Riparian protection and thinning would help contribute to riparian recovery within both watersheds over the long term. Protection of riparian vegetation and

streams for fisheries would be beneficial for current and future riparian and aquatic functions, erosion control, water quality and wildlife habitat.

#### In-Stream Structure and Stream Function

The untreated buffers would protect streambanks, provide shade, and would contribute to maintaining current water quality and conditions of riparian and aquatic functions. This would include tempering of stream and riparian microclimates from edge effects, retaining slope stability and the associated reduction of stream sedimentation, and maintaining litter inputs to streams and riparian areas.

#### Stream Flows

Under this proposed action, the effects on peak and low flows would be minimal since all the residual trees within the non-treated buffers, Riparian Reserves, and uplands would use the increased available water.

#### Rain on Snow Events and Peak Flows

In general, the rain on snow (ROS) zone is considered to be between 1150 feet and 4000 feet for the west coast. Analyses using local records for the lands in the eastern portion of the Eugene district found the peak ROS zone to be from 2130 to 2810 feet in elevation. Below 1500 feet, almost no impact from the ROS effect was found. The project area ranges in elevation from 1200 to 1800 feet in elevation. It is not very likely that there could be an increase in flows from a ROS event during the time this stand is returning to hydrologic maturity.

#### Roads and Stream Sediment

Under the proposed action, road renovation and temporary spur construction would occur. The new spur construction would be on ridges and would be at a distance where no measurable impacts to streams would be expected. Sediment from road work would be localized and would be limited by season of work and low gradients. Sediment entering tributaries would probably be retained in the low gradient area of the South Fork of the Alsea.

### **Wildlife**

#### Threatened and Endangered Species

Because of the modification of dispersal habitat, this project would "May Affect, but is Not Likely to Adversely Affect" the northern spotted owl.

Upon completion of this proposed action, the project area would still function as dispersal habitat given the canopy closure would remain above 40%. This would be sufficient to provide temporary habitat and travel corridors for transitory owls. In the long-term, habitat for the northern spotted owl, marbled murrelet, and bald eagle would gradually improve over time, until the next entry.

No habitat for the marbled murrelet exists within the harvest unit, but approximately eight acres of suitable habitat does exist within 0.25 mile of the proposed action. This area was not subject to murrelet surveys and therefore must be assumed to be occupied. Consequently, this action would "May Affect, and is Likely to Adversely Affect" the marbled murrelet due to disturbance.

#### Special Status Species

Quality of goshawk habitat would decline immediately after harvest due to ground disturbance and subsequent disruption of the prey base. As the prey base recovers, foraging opportunities would improve. There would then be a second reduction in foraging opportunities as brush encroaches within the stand. As the stand matures, the brush component would begin to die out as the canopy closes and light to the forest floor diminishes. The subsequent reduction in brush and increased size

of remaining trees would result in better foraging and nesting opportunities for this raptor.

This proposed action would not have negative consequences to the aquatic habitat of the western pond turtle. These turtles travel overland in search of overwintering or nesting areas. Since this species nests in clearings, and generally overwinter in draws, it is unlikely any turtles would be killed or injured during the proposed action. Habitat for this species would not be degraded as a result of this proposed action.

#### Survey and Manage Species

It has been observed within the Coast Range of the Eugene District that reducing the number of conifers ultimately favors bigleaf maple and the associated mollusk fauna. Populations of these mollusks appear capable of surviving and recolonizing after some disturbances such as commercial thinning. The proposed action is not expected to pose a risk to the local viability or distribution of the Survey and Manage mollusks species.

#### Big Game

Immediately after the proposed treatment, the value of hiding and thermal cover would be reduced. The older habitat to the east would still provide this component.

Browse would increase in the newly harvested unit until it is shaded out by a closing canopy. As the understory and multiple canopies develop, hiding, escape and thermal cover would improve until final harvest entry.

#### Neotropical Migrants

Species preferring early to mid-successional stands and edge habitat such as the dark-eyed junco winter wren and corvids, would be expected to utilize this stand after treatment. Over the long term, this stand is expected to provide habitat for later seral species such as the hermit warbler and pileated woodpecker until final harvest.

### **Recreation and Visual Resources**

The proposed action would reduce the amount of visible trees within the SRMA boundary but within the limits of VRM III. As recreation activities are disbursed in nature, logging activity would not visually affect the site on a long term basis. There may be short term disruptions in traveling on major roadways during the logging operation. Decommissioning of portions of roads would directly affect 4-wheel activity that has and would have occurred on them. Most are short segments and some are not driveable. These road closures would not have a major effect on this recreational activity as many other roads would still be available.

### **CWD, Snags, and Fuels**

Herbaceous, fungal, and bryophyte diversity would be maintained by retention of snags and existing down logs within the treatment area. The increase in large down woody material in the treatment area, along with the retention of existing down logs and snags, would provide a number of ecosystem functions, including habitat for many species, moisture retention, and nutrient retention and cycling. These effects would contribute to long term site productivity.

With the proposed action, the present fuel loading would initially increase from an approximate average of 6.4 tons per acre to a post harvest level of approximately 20.9 tons per acre. In the short term, fuel loading within the treatment area would increase throughout the treatment areas. Fuels would be almost entirely ground fuels with minor amounts of scattered ladder fuels. In the long term, fuel loading would be similar to Alternative 2 and less than the no-action due to less mortality within the stand.

## **Social-Economic**

This proposed commercial thin would provide immediate commodities to the public. The proposed action would support the Eugene District harvest commitment levels for Fiscal Year 2001. Timber would be supplied for the benefit of the economy and timber receipts would benefit the County and services provided to communities.

## **5.3 Alternative 2**

### **Vegetation**

The environmental consequences to vegetation in the upland under this alternative would be the similar to those described in the proposed action. The environmental effects to vegetation with no treatment in the Riparian Reserves would be similar to those effects to vegetation described in Alternative 3 - No Action.

### **Botanical Resources**

No federally Threatened, Endangered or BLM Special Status plant species would be impacted by the actions of this alternative. Overall, the environmental consequences to botanical resources would be the similar to those described in the proposed action.

### **Soils**

Under this alternative, the overall impacts to soils would be less than those described in the proposed action. There would be no impact within the Riparian Reserves. Within the uplands, actions associated with this alternative would not cause soil compaction capable of impairing overall stand growth, long-term productivity, or the hydrologic behavior of the treatment area.

### **Fisheries, Aquatic, and Riparian Resources**

Under this alternative, the overall impacts to fisheries, aquatic, and Riparian Resources would be similar to those described in the Alternative 3 - No Action.

### **Wildlife**

Under this alternative, the overall impacts to Threatened and Endangered Species, Special Status Species, Survey and Manage Species, Big Game, and Neotropical Migrants in the uplands would be similar to those described in the proposed action. Within the Riparian Reserves, no immediate modification of wildlife habitat would occur. Without thinning these Reserves, the development of late-successional habitat would occur more slowly.

### **Recreation and Visual Resources**

Under this alternative, the overall impacts to Recreation and Visual Resources would be similar to those described in the proposed action.

### **CWD, Snags, and Fuels**

The impacts of the upland commercial thinning relative to CWD, snags, and fuels would be similar to those described in the proposed action. The impacts within the Riparian Reserves would be similar to those

described with Alternative 3 - No Action.

### **Social-Economic**

Alternative 2 would provide immediate commodities to the public. Alternative 2 would support the Eugene District commercial thinning harvest commitment levels for Fiscal Year 2001 at the same level as Alternative 1, however, less timber volume would be supplied for the benefit of the economy with this alternative.

## **5.4 Alternative 3 - No Action**

### **Vegetation**

The "No Action" alternative would have no immediate direct effects to the existing forest vegetation. By not commercially thinning the proposed project area within the GFMA LUA, the stands would continue to function and grow older along their current growth trajectory. As these stands age, they begin to lose their ability to respond well to a thinning. Eventually the stand reaches a point where mortality of suppressed and intermediate trees is imminent. Within the Riparian Reserve, the long-term development of mature and late-successional forests and their associated species would occur very slowly through natural disturbances and forest succession over time. Cumulatively, more acres of dense forest subject to increased suppression mortality and slower growth within these watersheds would exist.

### **Botanical Resources**

The "No Action" alternative would have no immediate direct effects on botanical resources. The no action alternative would allow for the continuation of the current forest conditions and would have no impacts to Survey and Manage sites.

This alternative would have no cumulative impacts on Survey and Manage botanical species. Within the watershed, known populations associated with future management activities would be given long-term protection according to Survey and Manage protocols.

### **Soils**

The "no action" alternative would have no direct effect on soil resources.

### **Fisheries, Aquatic, and Riparian Resources**

Under the "No Action" alternative, untreated riparian and stream buffers would protect streambanks, provide shade, and would contribute to maintaining current water quality and conditions of riparian and aquatic functions. This would include tempering of stream and riparian microclimates from edge effects, retaining slope stability and the associated reduction of stream sedimentation, and maintaining litter inputs to streams and riparian areas. These effects would contribute to the protection of water quality for fisheries and to the protection of riparian and aquatic resources in the short term. Within the Riparian Reserve, the long term development of mature and late-successional forests and their associated benefits to aquatic and fisheries resources would occur more slowly than the proposed alternative through natural disturbances and forest succession over time.

The lack of management actions under this alternative would contribute to the cumulative process of riparian recovery within these watersheds. This would occur over the long-term by maintaining untreated Riparian Reserves adjacent to the South Fork of the Alsea and Ferguson Creek tributaries which would protect

streambanks, provide shade, and maintain current water quality and conditions of riparian and aquatic functions.

#### **Wildlife**

The “No Action” alternative would not modify dispersal habitat for the northern spotted owl both in the upland or Riparian Reserve. These areas would continue to contribute cumulatively to dispersal habitat within the watershed and across the landscape. Within the Riparian Reserve, the long term development of mature and late-successional forests and their associated benefits to late-successional dependent species would occur slowly through natural disturbances and forest succession over time contributing to a cumulative increase in late-successional forest habitat within the watershed. Wildlife species associated with the current habitat conditions would persist under the present stand conditions but would see changes dependent upon future stand characteristics, disturbances, and type of management over time. As the stand matures slowly over time, species more associated with later seral stages would be expected to occupy this stand.

This alternative would have no cumulative impacts on Survey and Manage mollusk species. Within the watershed, known populations associated with future management activities would be given long-term protection according to Survey and Manage protocols as with the proposed action. The mollusk populations are expected to continue their presence in the long-term within the project area and within the watersheds with the “no action” alternative.

#### **CWD, Snags, and Fuels**

The contribution of down wood and the development of future large snags and down wood would be entirely dependent on natural disturbances and suppressed mortality that would occur slowly over time. Fuel loading would increase with the increase in down wood from smaller trees due to natural disturbances and suppressed mortality. In the long term, fuel loading would be greater than Alternatives 1 and 2 due to mortality within the stand.

#### **Recreation and Visual Resources**

These resources would not be affected by the no action alternative as there would be no change in the scenery.

#### **Social-Economic**

Under this alternative, commodities provided to the public through commercially thinning of the proposed project area would not occur. Timber to benefit the economy and timber receipts that would benefit the County would not be realized unless an alternative harvest area would be provided. Alternative areas may have environmental effects that exceed those of this proposal.

This alternative would have a cumulative effect of providing less commodities to the public over time. As vigor and growth of the stand through time declines, future harvestable volume would be lost. Timber to benefit the economy and timber receipts that would benefit the County would decrease.

## **6.0 EFFECTS ON AQUATIC CONSERVATION STRATEGY OBJECTIVES**

BLM administered lands within the range of the northern spotted owl will be managed for the following Aquatic Conservation Strategy (ACS) objectives. The following are findings of how well the proposed action met the ACS objectives. All alternatives in this EA would meet or exceed ACS objectives; some would have less impacts to



aquatic systems.

### **6.1 ACS Objective 1**

*Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.*

The forest in the area of the Proposed Action is on the ridge between the Siuslaw and Willamette River basins. It is also part of the connectivity from north to south in the Coast Range. The area has been subjected to fires, both natural and human-caused, and, more recently, to harvesting. As a result, the forest around the project area is a mixture of age classes and unit sizes. The proposed action is designed to accelerate the development of more mature forest conditions. The aquatic system, as a result of past landslide activities that created a steep cascade, includes extensive low-gradient stream and wetland. The habitat is good for salmonids. Access for anadromous salmonids, including the coho salmon, is blocked by the cascades and by South Fork Alsea falls several miles downstream. As a result, the portion of South Fork Alsea in the project area is naturally isolated for now although the cascade area can be expected to evolve over time so that fish passage would be more likely in the future.

### **6.2 ACS Objective 2**

*Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.*

Connectivity of aquatic and riparian areas within the project area are good, with species able to move up and down streams. Connections with areas of the South Fork Alsea below the project area are limited by the cascades at the lower boundary of the project area. A further limit to anadromous connectivity is South Fork Alsea falls several miles downstream. While amphibians and many invertebrates can migrate over the cascade areas it is currently a barrier for salmonids. The lateral connectivity along the South Fork Alsea in the project area is enhanced by the low gradients, high water tables, and regular inundation during high flow periods. These conditions and the lateral connectivity would not be expected to be impacted by the proposed action.

### **6.3 ACS Objective 3**

*Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.*

The aquatic system in the project area is in good condition, with good to excellent habitat for coho and cutthroat. As a result of the downstream cascades and the deposition of sediments in the valley, a long low-gradient wetland area has developed. While, in geologic terms, it is probably transitory it currently creates conditions favoring salmonids. The proposed action is not expected to alter the current integrity of the aquatic system in the project area.

### **6.4 ACS Objective 4**

*Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and*

*riparian communities.*

Based on the observations made of the aquatic system in the project area, water quality appears excellent for resident and anadromous salmonids, as well as for amphibians and many other aquatic species. No sources of contamination are known, and the stream is not considered water quality limited. The proposed action is not expected to alter the water quality in the project area.

## **6.5 ACS Objective 5**

*Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.*

No current major landslide events are evident in the project area. A large landslide in the past created the cascades area at the lower boundary of the project area, falling from a rocky ridge area into the stream channel. The primary source of sediment in the project area is roads. While the main road into the subwatershed is paved, the extensive network of maintained and unmaintained roads in the subwatershed may be sources of sediment. The proposed road work has the potential to create a short-term increase in sediment, although in the longer term the road work, including possible decommissioning of existing roads, has the potential to decrease sediment production. Amounts of sediment produced would be small and may be retained in the system as a result of low gradients and well-developed riparian vegetation.

## **6.6 ACS Objective 6**

*Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.*

Current flow patterns in the project area are moderated by the depositional materials accumulated above the cascades. This accumulation increases the potential water storage and so moderates the movement of water through and out of the system. Adjoining slopes of the project area are hydrologically mature. Some increase in flows may occur as a result of the thinning, but it is more likely any additional water that becomes available will be utilized by the remaining upslope and riparian trees. No detectable changes in flow patterns is expected below the project level as a result of the proposed activity.

## **6.7 ACS Objective 7**

*Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.*

The controlling feature for movement of water, water table elevation and floodplain inundation is the cascades area at the lower boundary of the project area. The low gradient and retention of groundwater contributes to the higher water table and high water inundation of floodplain in the mainstem South Fork Alsea and the larger tributary in the project area. The proposed action will not alter the current conditions.

## **6.8 ACS Objective 8**

*Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.*

The South Fork Alsea has developed extensive wetlands above the cascades area. The controlling mechanism is the cascades. The low gradient created by accumulation of sediments above the cascades has created favorable conditions for accumulation of woody material and the growth of grasses, brush and aquatic species. Riparian areas away from the wetlands are dominated by red alder and small conifer. The proposed action will not alter the wetlands area, but will contribute to the more rapid development of larger conifer to serve as a future potential source of large wood.

## 6.9 ACS Objective 9

*Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.*

As discussed in #8, the wetlands and riparian areas next to South Fork Alsea do provide habitat for riparian-dependent species. The areas next to the creeks will be maintained. Thinning in Riparian Reserves away from the creeks will help accelerate growth of these trees to create a more mature forest condition and increase the potential sources for large woody structure in the streams.

## 7.0 CONSULTATION AND COORDINATION

### 7.1 Project Development

The proposed action and alternatives were developed and analyzed by the following interdisciplinary team of BLM specialists:

NAME	TITLE	DISCIPLINE
Barry Williams / Karin Baitis	Soil Scientists	Soils
Mark Stephen	Forest Ecologist	Ecology
Eric Meyers	Engineer	Roads/Transportation
Dave Reed	Fuels Specialist	Fuels/Air Quality
Michael Southard	Archaeologist	Cultural Resources
Phil Redlinger	Silviculturist / Timber Planner	Silviculture
Al Corbin	Timber Manager	Timber
Dan Crannell	T & E and Wildlife Biologist	Wildlife Habitat
Russel Hammer / Leo Poole	Fisheries Biologists	Fisheries
Neil Armantrout	Fisheries Biologist	ACS Objectives
Jeanne Ponzetti	Botanist	Botanical Resources
Saundra Miles	Recreation Planner	Visual Resources and Recreation
Gary Hoppe	Landscape Planner	Planning and Environmental Coordination
Graham Armstrong	Forest Hydrologist	Hydrology

## 7.2 Consultation

### U.S Fish and Wildlife Service

This proposed action is addressed in the FY 2001 Habitat Modification Biological Opinion which has been extended by the U.S. Fish and Wildlife Service to cover FY 2002 habitat modification projects. All required mitigation measures included in this Opinion would be followed to ensure compliance with the Endangered Species Act.

Because of the modification of dispersal habitat, this project "May Affect, but is Not Likely to Adversely Affect" the northern spotted owl.

No habitat for the marbled murrelet exists within the harvest unit, but approximately eight acres of suitable habitat does exist within 0.25 mile of the proposed action. This area was not subject to murrelet surveys and therefore must be assumed to be occupied. Consequently, this action would "May Affect, and is Likely to Adversely Affect the marbled murrelet due to disturbance.

There would be no effect to the bald eagle.

### National Marine Fisheries Service

The federally listed coho salmon are present in the South Fork of the Alsea River to Alsea Falls four miles below the project area. Chinook salmon are found below the same falls. Because of the distance from the project area to known populations of coho, limited potential for sediment production from the proposed action, and the overall reduction in roads in the project area, it is determined that the proposed action would have No Affect on coho salmon, on Essential Fish Habitat for coho and chinook salmon, and Critical Habitat for coho salmon.

Spring chinook are present in the Long Tom River to the dam at Monroe. No spring chinook are known to reach Ferguson Creek. Habitat in Ferguson Creek is unsuitable for spring chinook. Because of the absence of spring chinook above Monroe, the absence of habitat for spring chinook in Ferguson Creek, the limited potential for sediment production and the distance from the project area to known spring chinook use, the project is determined to be No Affect on spring chinook, Essential Fish Habitat for spring chinook, and Critical Habitat for spring chinook.

### Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians

The Bureau of Land Management, Coast Range Resource Area consulted with the Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians as part of the cultural inventory to be conducted in conjunction with the environmental analyses process for the Fiscal Year 1998 and 1999 proposed timber sale program. A letter was sent on September 24, 1997. No response was received.

## 8.0 REFERENCES

- USDA, Forest Service and USDI, Bureau of Land Management. February 1994. *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl.*
- USDA, Forest Service and USDI, Bureau of Land Management. April 1994. *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl.*

USDA, Forest Service and USDI Bureau of Land Management. January 2001. Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines.

USDA, Forest Service and USDI Bureau of Land Management. September 2000. Management Recommendations for the Oregon Red Tree Vole, *Arborimus longicaudus* , Version 2.0.

USDI, Bureau of Land Management. November 1994. *Eugene District Proposed Resource Management Plan/Environmental Impact Statement*. Eugene District Office, Eugene, Oregon.

USDI, Bureau of Land Management. June 1995. *Eugene District Record of Decision and Resource Management Plan*. Eugene District Office, Eugene, Oregon.

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USDI, Bureau of Land Management and Oregon State Historic Preservation Office. 1998. *Protocol Agreement*.

USDI, Bureau of Land Management. October 2000. *Long Tom Watershed Analysis*. Eugene District Office.

**UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
EUGENE DISTRICT OFFICE**

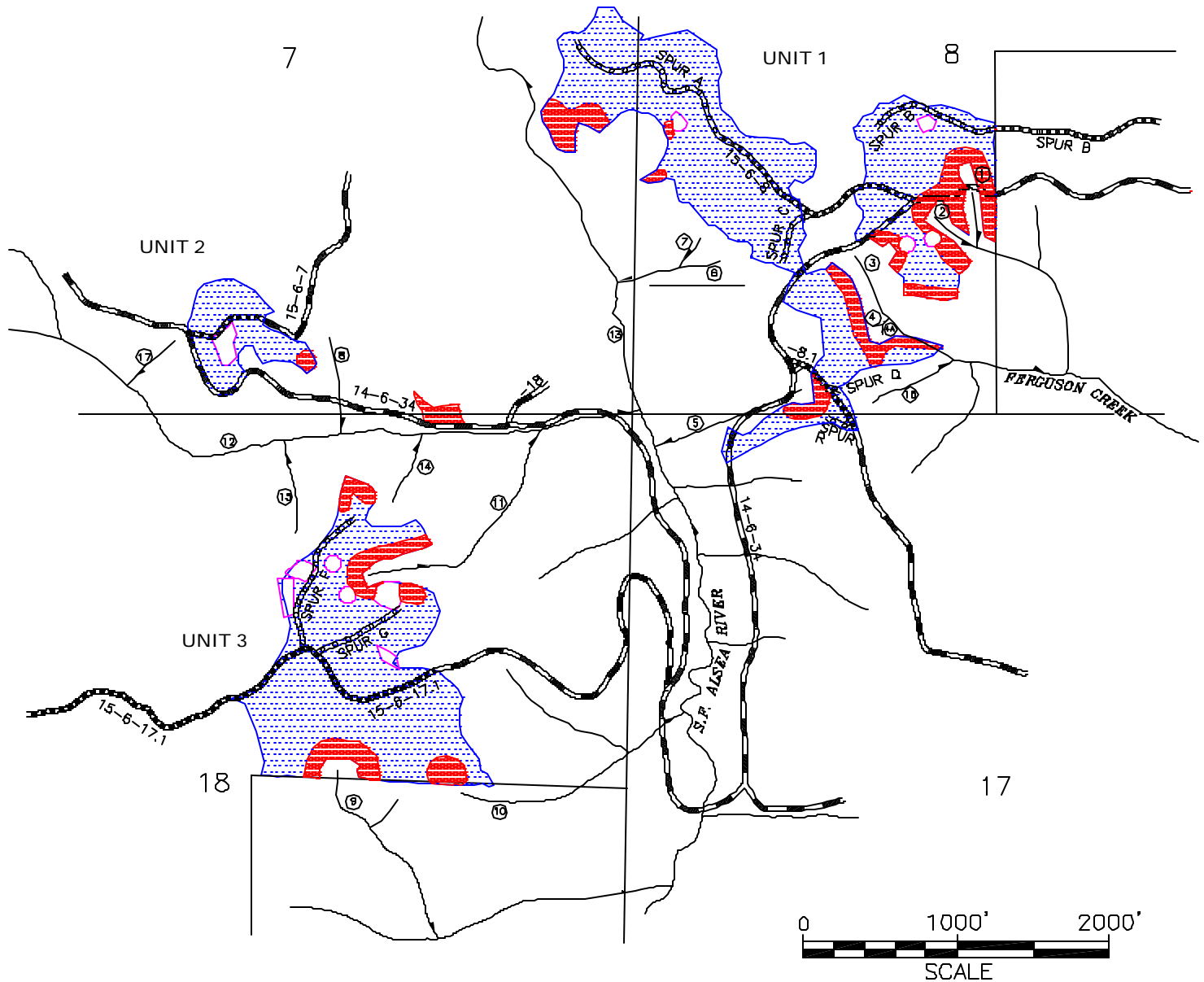
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


On the basis of the information contained in the Environmental Assessment, and all other information available to me, it is my determination that implementation of the proposed action or alternatives will not have significant environmental impacts beyond those already addressed in the *Record of Decision (ROD) for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (April 1994), and the *Eugene District Record of Decision and Resource Management Plan* (June 1995) as amended by the *Record of Decision for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, USDA Forest Service and USDI Bureau of Land Management January 2001*; with which this EA is in conformance, and does not, in and of itself, constitute a major federal action having a significant effect on the human environment. Therefore, an environmental impact statement or a supplement to the existing environmental impact statement is not necessary and will not be prepared.






UNITED STATES  
DEPARTMENT OF THE INTERIOR  
LITTLE AL EA MAP

T.15S., R.6W., SECS. 7,8,17 & 18



LEGEND

-  NO TREAT AREA
-  TREATED AREAS
-  RIPARIAN RESERVES

-  EXISTING ROADS
-  ROADS TO BE CONSTRUCTED
-  ROADS TO BE RENOVATED
-  STREAM ID NUMBER
-  STREAM